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VAPOR FUEL SYSTEM

Robert S. Shelton, 39010 N. 12th St. E., Palmdale, Calif., assignor of forty percent to Maurice R. Shirley, Palmdale, Calif.

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1 Claim. (Cl. 261—130)

This invention relates to improvements in vapor fuel systems that are to be used for internal combustion engines.

An object of this invention is to provide a vapor fuel system that will provide a great saving in gasoline, since approximately eight times the mileage that is obtained by the conventional internal combustion engine is provided by the use of such a system.

Another object of this invention is to provide a vapor fuel system that is provided with a reservior to contain liquid gasoline which is heated to provide vapors from which the internal combustion engine will operate.

With the above and other objects and advantages in view, the invention consists of the novel details of construction, arrangement and combination of parts more fully hereinafter described, claimed and illustrated in the accompanying drawing, in which:

Fig. 1 is an elevational view of a vapor fuel system embodying the invention;

Fig. 2 is an enlarged view, partly in section, showing the carburetor forming a part of the system shown in Fig. 1;

Fig. 3 is a transverse sectional view on line 3—3 of Fig. 2;

Fig. 4 is a transverse sectional view on the line 4—4 of Fig. 2; and

Fig. 5 is a transverse sectional view on the line 5—5 of Fig. 2.

Referring more in detail to the drawings, wherein like parts are designated by like reference numerals, the reference numeral **10** is used to generally designate a vapor fuel system embodying the invention.

The vapor fuel system **10** includes a conduit **11** which is connected to the gasoline tank for the internal combustion engine at one end and to a carburetor **12** at the opposite end. Interpolated in the conduit **11** is a gasoline filter **13** and an electric fuel pump **14**. A wire **15** grounds the pump **14** and a wire **16** connects the pump **14** to a gasoline gauge **18** on which is mounted a switch **17** which is connected to the conduit **11** when it is connected to the carburetor **12**. The gauge **17** is connected to a battery **19** of an internal combustion engine by a wire **20**.

Switch **18** is of conventional construction and is of the type disclosed in United States Patents Nos. 2,894,093; 2,825,895; and 2,749,401. The switch is so constructed that a float in position in the gauge is acted on by the liquid therein. As the liquid rises the float will disengage a pair of contacts mounted in the gauge to cut off electric pump **14**. As the float lowers due to the consumption of the liquid in the body the float will fall causing the contacts to be re-engaged to start pump **14** to replenish the liquid in the body.

The carburetor **12** includes a dome-shaped circular bowl or reservoir **21** which is provided with a centrally located flanged opening **22** whereby the reservoir **21** is mounted on a tubular throat **23**. An apertured collar **24** on the lower end of the throat **23** is positioned on the

intake manifold **25** of an internal combustion engine **26** and fastening elements **27** secure the collar to the manifold **25** in fixed relation thereto.

A vapor control butterfly valve **28** is pivotally mounted in the lower end of the throat **23** and the valve **28** controls the entrance of the vapor into the internal combustion engine **26** and thus controls the speed of the internal combustion engine **26**.

A raw gasoline pump **29** having an inlet **30** is mounted in the bottom of the reservoir **21** so that the inlet **30** communicates with the interior of the reservoir **21**. A spurt or feed pipe **31** connected to the pump **29** extends into the throat **23** so that by means of a linkage **32** that is connected to the pump **29** and to a linkage for the control valve **28** and the foot throttle of the internal combustion engine **26**, raw gas may be forced into the throat **23** to start the internal combustion engine **26** when it is cold.

The upper end of the throat **23** is turned over upon itself to provide a bulbous hollow portion **33** within the reservoir **21**.

An immersion heater **34** is positioned in the bottom of the reservoir **21** and a wire **35** grounds the heater **34**. A thermostat **36** is mounted in the wall of the reservoir **21** and extends into the reservoir **21**. A wire **37** connects the thermostat to the heater **34** and a wire **38** connects the thermostat **36** to a control **39** for the thermostat **36**. A wire **40** connects the control **39** to the ignition switch **41** and the ignition switch **41** is in turn connected to the wire **20** that is connected to the battery **19** by a wire **42**.

A pair of relatively spaced parallel perforated baffle plates **43** and **44** are connected to the bulbous portion **33** on the upper end of the throat **23** and a second pair of perforated baffle plates **45** and **46** extend inwardly from the wall of the reservoir **21** in parallel spaced relation to each other and to the baffle plates **43** and **44**.

The baffle plates are arranged in staggered relation to each other so that the baffle plate **45** is intermediate of the baffle plates **43** and **44** and the baffle plate **46** extends over the baffle plate **44**.

The baffle plate **45** is provided with a central opening **47** and the baffle plate **46** is provided with a central opening **48** that is of greater diameter than the opening **47** in the baffle plate **44**.

The domed top **49** of the reservoir **21** extends into a tubular air intake **50** that extends downwardly into the throat **23** and a mounting ring **51** is mounted on the exterior of the domed top **49** of the reservoir **21** in vertical alinement with the intake **50**. An air cleaner **52** is mounted on the mounting ring **51** by a coupling **53** as is the usual procedure and a spider **54** is mounted in the upper end of the mounting ring **51** to break up the air as it enters the ring **51** from the air cleaner **52**.

In operation and with the carburetor **12** mounted on the internal combustion engine in lieu of a conventional carburetor, the ignition switch **41** is turned on. Current from the battery **19** will cause the pump **14** to bring gasoline into the reservoir **21** until the switch **18** cuts off the pump **14** when the gasoline A has reached the level B in the reservoir **21**. The control **39** is adjusted so that the thermostat **36** will operate the heater **34** until the gasoline A has reached a temperature of 105° at which time the heater **34** will be cut off. When the gasoline A has reached the proper temperature, vapor therefrom will be available to follow the course indicated by the arrows in Fig. 2.

The internal combustion engine **26** is then started and if the foot control is actuated the pump **29** will cause raw gasoline to enter the intake manifold **25** until the vapors from the carburetor are drawn into the manifold **25** to cause the internal combustion engine **26** to operate.